



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, Ca. 94105-3901

N00217.002876  
HUNTERS POINT  
SSIC NO.5090.3

September 7, 1993

Raymond E. Raymos  
Base Closure Team  
Western Division  
Naval Facilities Engineering Command  
900 Commodore Dr.  
San Bruno, CA 94066-2402

Dear Mr. Raymos:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Parcel A Site Inspection (SI) Report prepared by PRC Environmental Management Inc., dated July 30, 1993. Our comments, including those of our Regional Toxicologist and our consultant, Bechtel Environmental Inc. are enclosed. Please contact me at (415) 744-3285 with any questions you may have regarding our comments.

Sincerely,

A handwritten signature in cursive script that reads "Roberta Blank".

Roberta Blank  
Remedial Project Manager

Enclosures (2)

cc: Jim Sullivan, NSTI  
Barbara Smith, RWQCB  
Cyrus Shabahari, DTSC  
Amy Brownell, SFPHD  
Gary Welshans, PRC

## U.S. EPA Parcel A Draft SI Report Comments

1. As stated in Section 1.1, the original objective of the site investigation described in this report was to evaluate preliminary assessment sites 19, 41, 43, 45, 50, and 51 for possible inclusion in the Navy's Installation Restoration program. Since the Navy intended to lease this Parcel to the City, it was decided that the focus of the SI could be limited to surface soil direct contact exposure pathways (soil ingestion and dermal contact) for residents and workers. This is because under a lease, the Navy could go back to the Parcel during future Remedial Investigation activities if needed, and continue to investigate other pathways and remedial actions.

However, since preparation of the work plans, it appears that Parcel A will be transferred to the City through a deed as opposed to a lease. CERCLA Section 120(h)(3), requires that the Navy will have taken all remedial action at a site prior to a deed transfer. Therefore, the limited SI objectives need to be expanded. In particular the SI report must now address groundwater, subsurface soil impacts to groundwater, ecological impacts, and any other exposure pathways that could require remedial action at Parcel A.

2. The Navy is planning to address groundwater contamination in the bedrock of Parcel A as Addendum #3 to the SI work plan. We will review those results when available. However, the issue of groundwater contamination in the lowland portion of Parcel A has still not been thoroughly addressed.

For example, if the VOCs detected in soil and groundwater at UST S-812 are not believed to have come from the tank, then another source would be suspected to exist. Either way, the extent of VOC contamination in this area has not been determined.

Groundwater conditions in the lowland areas of Parcel A are described on pages 11-13. No monitoring wells exist in this area of Parcel A. Are there any data from adjacent parcels where monitoring wells have been installed regarding the proximity of contaminants in the groundwater to Parcel A, and regarding water levels that could be used in this section?

3. Remaining contamination in soils on parcel A should be evaluated for potential to release to groundwater under the site. For example, the SI report states that UST S-812 does not appear to have contributed to the contamination of groundwater at the site, but does not discuss the potential for such contribution in the future.

4. Section 2.2.3 should specifically address whether it is possible that bedrock groundwater beneath Parcel A is hydraulically connected to the commercial spring water bottler near the Hunters Point Annex. The SI report should also discuss the

existence and use of any other water wells near the Hunters Point Annex site, the population served by those wells, and whether water wells draw from aquifers underlying Parcel A.

5. The SI report does not evaluate the surface water pathway thoroughly. For example, the SI report should discuss fisheries, sensitive environments, and public use of the Bay that may exist in the vicinity of the probable point of entry where surface runoff from the Parcel would enter the Bay. Sediment, San Francisco Bay water and runoff water samples should be considered. Site floodplain status should be discussed. (See also comment #10 regarding ecological receptors).

6. The main focus of this SI was to evaluate PA 19, 41, 43, 50, 51 and UST S-812. To address other areas of Parcel A, previous investigations are mentioned in the SI Report, but an attempt is not made to coordinate their results or recommendations with those of the SI. The significance of these previous investigations in determining the nature and extent of contamination at Parcel A needs further evaluation. The SI report should evaluate the entire parcel and confirm the methods used previously to declare the remainder of the parcel free of hazardous substances. Sections 2.1.1 and 2.1.2 raise more questions than they answer. For example:

a. The initial assessment study conducted by WESTEC in 1984 recommended that a confirmation study be performed at a spill site near Building 816. The Navy should conclude the discussion of the WESTEC study by indicating that this area was further investigated during the PA-41 site investigation, if this is the case.

b. Six shallow borings were drilled in the lowland area of Parcel A during the EMCON study, and the 1 composite sample taken detected SOCs and metals. The EMCON study recommended further work be done, but apparently none was. The SI Report is silent on the meaning of this data or on the need for further work in this area.

c. The 1988 ERM-West fence to fence survey cited Building 808 as having inadequate containment and labelling of stored chemicals. The SI Report provides no additional information regarding the status of this building.

The SI Report does not say whether the Navy believes that the ERM-West inventory was complete, or what the Navy's basis was for determining which areas to include in the SI work plan. Section 2.1.1 should describe in more detail the ERM-West fence to fence survey results and methods. This discussion should specifically address Parcel A. Were all the building in Parcel A investigated?

Section 2.1.1 should present an inventory of buildings, foundations, and other structures found on Parcel A. This inventory should be annotated to include information about the current and past uses of these facilities including hazardous materials use.

d. Section 2.1.2 should present the methodology and quantitative results of Aqua Terra Technologies air quality investigation and quantitatively discuss human health risk associated with exposure to air at the site.

e. Section 2.1.2 should discuss the significance of the asbestos detected in air samples collected by HLA during July 1991. The quantitative results of this sampling and analysis should be presented.

7. Section 1.3 should be expanded and made specific for Parcel A. It should include historical use information back to when the property was not yet developed. This section should also include a description of the current and historical uses of properties adjacent to Parcel A both inside and outside the Hunters Point Annex.

Also, the PA-specific site histories and descriptions provided in Section 4.2.1, 4.3.1, 4.4.1, 4.5.1, and 4.6.1 should be much more detailed. They should include a discussion of the missions and operations associated with the each site and identification of specific chemicals and chemical products used in operations associated with the sites.

Historical activities specific to the remainder of Parcel A, e.g. the areas not included in the PA sites, should be addressed in a separate section.

8. What if the additional work mentioned on page 7, being done to assess asbestos, lead paint and RCRA hazardous wastes to "determine the extent of additional hazardous material distributions throughout HPA" encounters releases in Parcel A not covered by the SI Report? What is the timing and reporting mechanism for handling such occurrence?

9. Section 2.2.2 should include a copy of the map from Bonilla, 1971, if possible.

10. The section on ecology on page 13 does not say whether any threatened or endangered species exist on or use Parcel A. Did the Navy intend to do any further work on Parcel A as part of the Ecological Risk Assessment? Since all remedial action must be taken prior to deed transfer, how does the Navy intend to address any work that would have taken place for Parcel A in the ECA? (See also comment number 5 above).

11. Section 2.2.6, Meteorology, discusses that "under prevailing wind conditions, transport of dust or volatiles onto Parcel A would be from off-site areas." Is this in reference to off-site areas on HPA or off of HPA? Does the landfill at parcel E pose any potential problem regarding methane gas migration to current or future receptors on Parcel A?

12. The field variances mentioned on page 10 should be included in an appendix to the SI Report, and the specific variance date and title in question should be identified in the text so the reader may refer to it in the appendix.
13. Where was the steam generated that supplied heat to buildings on Parcel A and why did steam lines from Parcels B, C and D lead to Parcel A as stated on page 17?
14. How will the pipe-lagging on the steam lines that contains asbestos, mentioned on page 18, be handled?
15. Section 3.2.2, page 17, should include the photographs of steam pipe interiors.
16. Section 3.2.3, page 17, should include a discussion to support the representativeness of utilidors PA45ST100 and PA45ST101.
17. Section 3.2.4, page 18, bullets 3 and 4 should specify that no visual evidence was observed during visual inspections.
18. Plate 4 should clearly identify storm drain discharge points.
19. Section 3.3.2, page 20, or Appendix B should discuss the type of organic vapor analyzer, e.g. photoionization detector, flame ionization detector, and the significance of the readings. What does 1 ppm mean in terms of risk?
20. Page 20, Section 3.3.3 states that insufficient sediment was present at the proposed sampling locations to permit sampling. Yet on Table 5 it indicates that abundant sediment was observed at manholes PA50SW104 and PA50SW105 and moderate sand was observed at PA50SW112; why couldn't these areas be sampled? If possible contamination exists, sediment from any point in the storm drain system should be sampled. The footnotes to this Table appear to be missing.
21. What is the explanation for where the trace sheen on stagnant water observed at PA50SW116 and PA50SW118 came from and what is the significance of this (page 20)?
22. Plate 5 should illustrate sanitary sewer reach 1 and 2 as discussed in Section 3.4.1, page 22.
23. The YEI 1988 study regarding the sewer system referenced on page 22 points to the "degradation of the systems physical integrity, localized deposition of organics, and the potential for methane gas formation." However, these problems are not further addressed in this SI report.
24. The delay, if any, between the initial electron capture detection analysis and GC/MS analysis relating to the PA-50 should

be discussed, as well as any possible effects of sample handling procedures.

25. Sewage at Building 101 that contaminates the storm drain line in Parcel B should be immediately addressed, since the storm drains discharge to the Bay. Are any industrial discharges from tenants entering the sewer system and storm drain? Since this release originates in Parcel A, it should be handled as part of this Parcel transfer, and not deferred to the Parcel B SI Report, as stated on page 24.

26. The SI Report states on page 24 that "A small amount of white foam was observed at manhole PA50SN146 near Building 813..." This manhole does not appear from Plate 5 to be near Building 813, but rather near Building 816. What is the possible significance of this foam?

27. Section 3.4.3.1, should discuss the implications of elevated OVA readings and the presence of methane. What is the methane in air lower explosive limit concentration?

28. Section 3.5.3 says that visual observation was used to assess the potential for transformer releases. Why is visual observation alone adequate to determine release potential? The discussions in Sections 3.5.3 and 3.5.4 should include assurances that all current and past transformer sites in Parcel A have been identified and investigated. If this assurance cannot be provided, then a discussion of the consequences of missing a current or former transformer site should be discussed.

29. It would be helpful to the reader if the specific areas within PA-41 identified on page 30 (former drum storage area, SW corner of the parking lot, and the north side of the site); were labelled on Plate 8.

30. Regarding Building 818, why was visual observation adequate to assess release potential at the chlorination plant, as stated at the top of page 31? The Section 4.2.1, Building 818 discussion should elaborate on the statement that no indication of soil impacts were observed.

31. The field observations, historical, and photographic information discussed in Section 4.2.2, page 31, for the PA-41 field investigation should be referenced or included in this report.

32. Section 4.2.2, page 33, describes the use of health based levels to make decisions about whether or not to analyze samples. This discussion should specify the risk value used to calculate the health based level.

33. How was lateral extent of contamination at the former drum storage area at PA-41 determined? The lateral extent of contamination at PA-41 appears to have been determined by visual

inspection, and no post-excavation samples were taken outside the boundary of the excavation area to confirm that all contaminated soil had been removed.

34. Section 4.4.2, page 41, should provide more details on the disposal of sandblast grit from decontamination of Bikini Atoll Naval vessels, for PA-19. It is our understanding that this material was disposed of off site.

35. On page 45, it says that the Gardening Tool House, PA-43 inventory noted 24 gallons of pesticide stored. Is there any inventory of what the specific pesticides were? Section 4.5.1 should specify what pesticides were stored in the gardening shed and the chemical composition of the thinner, alkali, and lime wastes.

36. The SI Report needs to clearly and explicitly state what the cleanup goals for each PA site and each constituent were (in numerical terms) and clearly explain how they were achieved by the actions taken.

The SI Report does not appear to use a consistent set of criteria to assess whether or not a site requires further investigation. For example, Section 4.2.4.1 concludes that the north side of PA-41 requires no further investigation because metals are present at levels below health based levels but above background. Section 4.2.4.3 concludes that the former drum storage area at PA-41 requires no further investigation because risk levels in this area approach the *de minimis* levels associated with background concentrations.

37. The text of the SI Report should explain to the reader how HBLs were derived, how risk was derived and how IALs are being used, including the rationale for the use of arsenic as the constituent that drove the cleanup for the entire Parcel. The way the text is written it is difficult to understand these issues, without a complete understanding of Appendix F. This SI Report is a public document and the text should be written in part with that in mind. The Report should explain how this risk approach differs from the Superfund Risk Assessment Guidance and why the Navy believes this is appropriate.

## **Bechtel's Comments on the CERCLA Human Health Risk Assessment**

The health risk assessment of chemicals found in soil samples from Parcel A of Hunters Point was critically reviewed. The approach used to assess risk, the results of the assessment, and the conclusions drawn are presented in Appendix F of the undated Draft Parcel A Site Investigation Report. The review included reading the executive summary of the report and was limited to technical aspects of the risk assessment.

The assessment addressed five "sites": PA-19, PA-41, PA-43, PA-50, and the underground storage tank (UST S-812). Risk presented by each chemical was quantified by multiplying a target risk level (for cancer) or target hazard index (for systemic toxicity) by the ratio of the exposure point concentration and the health-based level. An estimate of total cancer risk or hazard was obtained by summing the risk values. *De minimis* cancer risk levels of  $2 \times 10^{-5}$  to  $3 \times 10^{-5}$  were established on the basis of the risk presented by ambient arsenic. In general, removal of affected soil reduced the cancer risk presented by all carcinogenic chemicals to the *de minimis* level.

### **General Comments**

1. The approach used to quantify cancer and non-cancer risk differs from that described in the EPA risk assessment guidance manual for Superfund sites. Although it produces the same risk estimates, it does not provide the level of detail that the conventional EPA approach does. The HBLs for soil are based on the total oral and dermal dose. One cannot determine from any risk estimate the relative contributions of oral and dermal exposure to the risk estimate. The conventional EPA approach is more understandable to those accustomed to the approach, and is more flexible and provides a better idea of the relative contribution of different pathways to overall risk.

2. If there is a potential for completion, seemingly minor pathways should be included in the assessment. Such pathways include air and homegrown vegetables as well as fish consumption (runoff to San Francisco Bay) and groundwater consumption. If available data do not permit the inclusion of certain pathways, a statement of limitations should be made early in the report.

3. Risk associated with transport of contaminants from adjacent parcels to Parcel A should be addressed.

### **Specific Comments**

1. Page F-3, last sentence beginning with "These three samples..." is incomplete.

2. Page F-4, first line. The report should explain what the term "interim ambient levels" means and discuss how were they developed.



Insert this explanation on Page 34 of the report where the term is first used. Such an explanation is important because of the *de minimis* cancer risk level is based on the interim ambient level for arsenic.

3. Page F-5, second paragraph, last complete sentence and the sentence that follows. These sentences do not make sense. The groundwater exposure pathway was not evaluated in the assessment; therefore, HBLs for subsurface soils are irrelevant.

4. Page F-12. The selection of 500 mg/kg as the HBL for lead instead of 250 mg/kg is a departure from the seemingly careful and deliberate attempt in the risk assessment to be conservative. Please explain why the 500 mg/kg level was chosen over the lower health-based level derived with the IU/BK model.

The HBL for lead recommended to protect workers may or may not be protective. The appropriate HBL depends on worker activity. The EPA-recommended soil intake rate of 50 mg/day for workers is based on person who works in an office. The soil ingestion rate for a person engaged in soil excavation at the site for installation of underground utilities or other reasons is likely to be much higher. If the rate cannot be estimated, it should be addressed as an uncertainty that might underestimate risk.

5. Page F-12, first paragraph, line 7. Shouldn't the 100 mg/kg in parentheses be 100 mg/day?

6. Pages F-14 to F-20. Toxicity values for TPH and TOG. TPH and TPH-based TOG measurements were developed to rapidly and inexpensively determine if petroleum hydrocarbons are present in soil and other environmental samples. Because of the large uncertainty in the identities of the compounds that comprise TPH or TOG, their use in risk assessments should be avoided. If a sample contains TPH or TOG, efforts should be made to identify the individual components if a risk assessment is contemplated. Use of TPH and TOG measurements in a risk assessment may overestimate risk when the risk presented by components of TPH or TOG are also estimated. Overall, the effort is unwarranted and without scientific validity.

7. Page F-22 to F-23. Rationale for selecting  $10^{-4}$  to calculate HBLs. Because of the way the HBLs were used to quantify risk, the rationale presented for selecting  $10^{-4}$  instead of  $10^{-6}$  to derive the HBLs serves no useful purpose. The risk presented by a chemical at a given concentration will be the same at all target risk levels so long as the target risk level and the level of risk on which the HBL is based are the same. In other words,  $(10^{-4} \times C)/HBL_1 = (10^{-6} \times C)/HBL_2$  if  $HBL_1$  is based on  $10^{-4}$  and  $HBL_2$  is based on  $10^{-6}$ .

8. Page F-22, second complete paragraph.  $0.0004 + 0.25 = 0.2504$ . Value given is 0.2501.

9. Page F-28, second paragraph. While nickel applied to the skin

does remain primarily in the skin, the risk posed by nickel is largely due to the ingested dose. According to the report, nickel has a hazard index of 1.2. Not shown in the report is the fact that the hazard index for ingested nickel is 0.99 whereas the hazard index for nickel absorbed through the skin is 0.22. At Site PA-43, the hazard index for nickel ingestion would have been 1.65 ( $0.825 \times 2.0$ ) before remedial action was taken. This level of detail is not revealed when HBLs are used to quantify risk. If action had not been taken to reduce risk by removing some of the contaminated soil, the risk presented by nickel should have been considered more serious than the report leads one to believe, particularly if added to the risk presented by other metals that have similar mechanisms of toxic action.

10. Page F-31, HBLs for subsurface MCPA and MCPP. The need for subsurface HBLs for these two compounds is unclear, particularly in view of the fact that on Page F-5, the reason given for not being able to calculate subsurface HBLs is the absence of  $K_d$  values for those compounds and the way the surface HBLs were applied to estimate risk (Page F-31).  $K_d$  values would be needed if the intent was to base the subsurface HBLs on groundwater use (drinking, bathing, etc.). If that was indeed the intent, why wasn't the risk associated with groundwater use not considered for the other chemicals? Please revise the report to clarify this issue.

## MEMORANDUM

To: Roberta Blank (H-7-5)  
Remedial Project Manager

From: Daniel Stralka, Ph.D. (H-9-3) *MS*  
Regional Toxicologist

Subject: Review of Risk Assessment, Appendix F, Parcel A Site Inspection Report,  
Hunter's Point dated 30 July 1993.

Date: September 7, 1993

This appendix addresses the human health screening risk procedure and results for 6 parcel A preliminary assessment sites and is focused on the surface soils. As defined by the scope of this document, health based criteria (HBLs) or preliminary remediation goals (PRGs) as presented in RAGS Part B were used as screening criteria for further investigation. Using the primary human exposure routes for surface soils of ingestion and dermal contact, HBLs were calculated for target levels of  $10^{-4}$  excess cancer risk and a hazard index of 1. These values were then used to ratio the site exposure point concentrations and then summed to determine the total risk. Therefore, this determination is dependent on the overall focus on these six sites as the only significant areas in parcel A and that other exposure routes, subsurface soils and groundwater for human health and ecological, will be addressed in other documents. Due to the change in the status of the land transfer, it may be appropriate to include in this document the references and discuss other site investigation reports for Parcel A, as well as, the risk evaluations for other contaminated media and routes of exposure.

### General Comments

1. Continually the Navy and its contractors have mistakenly interpreted Agency policy as to the selection of the target risk level. The agency and in particular Region 9 is using a  $10^{-6}$  excess cancer risk as the point of departure for human health evaluations. As I have previously commented numerous times, the PRGs or HBLs must be calculated using this target level. This will have no effect on the total risk calculations as presented in this document, however, the target risk level is used for direct comparison in the text and therefore must reflect the appropriate targets. The text of Appendix F needs to be corrected to present all determinations above the  $10^{-6}$  excess cancer risk level. Using this target criteria the rationale for the removal actions can be substantiated and will flow logically.
2. The term de minimus is incorrectly used in the text. This term has historically been used to define combined risks below  $10^{-6}$  excess cancer risk and hazard indices below 1. The risk associated with background should simply be presented as such.
3. Tabular presentation of the total risk at each site before remediation, after removal actions and background risk would be very useful in interpreting this report..

### Specific Comments

1. Pages F-3 and F-4 are inconsistent.

2. Page F-3 Section 2.3. Arsenic at site 43 in the top 6 inches appears elevated above background 95 %tile of 7 ppm what are the possible sources?
3. Zinc at sites 19, 41, and 43 appears significantly elevated above the background of approximately 30 ppm (95 %tile). Whereas this will not be a human health hazard, it should be addressed in the ecological evaluation for its potential to effect nearby aquatic systems.
4. Page F-5. What is the depth below ground surface of the excavation of UST S-812?
5. Page F-10 Lead. The apparent extensive evaluation of the toxicity of lead and the final determinate of 500 ppm is not consistent. The use of the California leadsread model for residential and industrial exposure scenarios would seem sufficient and consistent with the text.
6. Page F-14 thru F-20 TPH. The determination of toxicity values for TPH as diesel is inappropriate. Where as TPH and TOG are general determinations and sufficient for the indication of petroleum contamination, however, the methods are not specific enough to met the needs of risk assessment. The determination of the individual petroleum components, as was done, is sufficient for the risk-based screening.
7. Table F-7 Oral absorption factors. It is appropriate to address the efficiency of oral uptake of chemicals by the gut to correct the toxicity for absorbed dose in the dermal evaluation. However, with the small amount of actual data available for the compounds of interest at this site, only those values which differ from unity need to be addressed and the less health protective assumption of unity discussed in the uncertainty sections.
8. Table F-7. An inhalation slope factor of  $6.3 \text{ (mg/kg day)}^{-1}$  is reported for cadmium on IRIS.
9. Table F-8. Sufficient data is not available to determine an oral RfD for benzene. The presented value should be removed.

If you have any questions regarding my comments, I can be reached at (415) 744-2310.